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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/603,023	06/24/2003	Marc Weydert	DN2002105	2594
27280 7590 03/13/2008 THE GOODYEAR TIRE & RUBBER COMPANY INTELLECTUAL PROPERTY DEPARTMENT 823 1144 EAST MARKET STREET AKRON, OH 44316-0001				
EXAMINER CHEUNG, WILLIAM K				
ART UNIT		PAPER NUMBER		
1796				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/603,023

**Applicant(s)**

WEYDERT ET AL.

**Examiner**

WILLIAM K. CHEUNG

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**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 2/12/08.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5, 7-12 and 16-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-12 and 16-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
- Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### **Request for Continued Examination**

1. The request filed on February 12, 2008 for a Request for Continued Examination (RCE) under 37 CFR 1.53(d) based on parent Application No. 10/603,023 is acceptable and a RCE has been established. An action on the RCE follows.
2. In view of amendment filed February 12, 2008, claims 6, 13-15 have been cancelled, and new claims 17-19 have been added. Claims 1-5, 7-12, 16-19 are pending.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 1-5, 7-12, 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Corvasce et al. (U.S Patent 5,672,639) in view of Huynh-Tran et al. (US 2003/0152758).

The prior art to Corvasce et al. relates to a rubber composition containing a (A) 100 parts by weight of at least one diene-based elastomer, (B) about 0.1 to about 120 phr of at least one reinforcing filler for said elastomer(s) comprised of at least one starch/plasticizer composite (Column 15, line 48-52). Regarding the claimed "tread" feature of claim 1, Corvasce et al. (col. 21-23, claims 47-86, particularly 67-86) clearly disclose using the disclosed tire having a tread comprising the rubber composition of Corvasce et al.

In regard to Claim 7, Corvasce et al. further disclose that the starch used in the starch/synthetic plasticizer is composed of amylose units and amylopectin units in a ratio of about 15/85 to about 35/65, and has a softening point according to ASTM No. D1228 in a range of about 180 °C to about 220 °C provided, however, that said starch/plasticizer composite has a softening point in a range of about 110 to about 160 °C according to ASTM No. D1228 (column 15, line 56-62).

In regard to Claim 8, Corvasce et al. disclose that the starch/synthetic plasticizer herein said plasticizer is a liquid at 23 °C. and is selected from at least one of poly(ethylenevinyl alcohol), cellulose acetate and plasticizers based, at least in part, upon diesters of dibasic organic acids and forms said starch/plasticizer composite having a softening point in a range of about 110 °C. to about 160 °C. when combined

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with said starch in a weight ratio in a range of about 1/1 to about 2/1 (column 16, line 34-41).

In regard to Claim 9, Corvasce et al. disclose that starch/synthetic plasticizer herein said plasticizer has a softening point of less than the said starch and less than 160 °C. and is selected from at least one of poly(ethylenevinyl alcohol), cellulose acetate and copolymers, and hydrolyzed copolymers, of ethylene-vinyl acetate copolymers having a vinyl acetate molar content of from about 5 to about 90, alternatively about 20 to about 70, percent, ethylene-glycidal acrylate copolymers and ethylene-maleic anhydride copolymers (column 17, line 7-15).

In regard to Claim 10, Corvasce et al. teach that diene based elastomer used in the rubber composition formulation is selected from at least one of homopolymers of isoprene and 1,3-butadiene and copolymers of isoprene and/or 1,3-butadiene with a aromatic vinyl compound selected from at least one of styrene and alphamethylstyrene (column 17, line 50-55).

In regard to Claims 11 and 12, Corvasce et al. teach that the rubber reinforcing carbon black is used in conjunction with the starch composite in an amount of at least 5 and preferable at least 35 phr of carbon black (column 5, line 41-44) and, if silica is used as a reinforcement together with carbon black, the weight ratio of silica to carbon black is desirably in a weight ratio in a range of about 0.1/1 to about 10/1 (column 6, line 14-16).

In regard to claim 16, the claimed glass transition temperature would be inherently possessed by the composition obviated by Corvasce et al. in view of Huynh-Tran et al.

The difference between the prior art and the present invention is the using of an adduct of maleic anhydride and polybutadiene in the rubber composition formulations. Corvasce et al. do not disclose that an adduct of maleic anhydride and polybutadiene can be used in making the rubber composition.

Corvasce et al. (col. 16, claim 6; col. 21, claim 52; col. 22, claim 72) disclose rubber composition, rubber tire, and rubber tire having a tread comprising polyester fibers. Since Huynh-Tran et al. (page 1, [0002]) provides an adhesion promoter comprising maleinized polybutadiene to synergistically improve adhesion of the rubber to polymeric fiber (page 2, [0022 and [0023]), it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the adduct of maleic anhydride and polybutadiene, as taught by Huynh-Tran et al., in Corvasce et al's rubber composition formulation because Huynh-Tran et al. have successfully exemplified incorporating a maleinized polybutadiene in a similar rubber composition with increased adhesion to polymeric fibers.

As to claims 2-3, Huynh-Tran et al. use a maleinized polybutadiene with a  $M_n$  of 5100 (page 6, [0050]). Huynh-Tran et al's disclosure on page 6, [0050] and [0051] renders obvious the characteristic of the maleinized polybutadiene as instantly claimed.

Regarding the claimed range amount of maleinized polybutadiene recited in claims, Huynh-Tran et al. (page 6, [0056]) clearly disclose 3, 5 or 10 wt% of maleinized polybutadiene in the disclosed rubber composition. Although the claimed range amount of maleic anhydride/polybutadiene adduct are in phr units, the recited 1.5 to 8 phr range in claims 1 and 18 corresponds to a range from about 1 to 5.2 weight percent in view of total weight as disclosed in applicants' specification (page 18, Tables 1 and 2). For the same rationale, the recited 1.5 to 6 phr range in claims 17 and 19 corresponds to a range from about 1 to 4 weight percent. Since Huynh-Tran et al. (page 6, [0056]) clearly disclose 3, and 5 wt% of maleinized polybutadiene in the disclosed rubber composition. Motivated by the expectation of success of synergistically improve adhesion of the rubber to polymeric fiber (page 2, [0022 and [0023]), it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the adduct of maleic anhydride and polybutadiene, as taught by Huynh-Tran et al., in Corvasce et als' rubber composition formulation because Huynh-Tran et al. have successfully exemplified incorporating a maleinized polybutadiene in a similar rubber composition with increased adhesion to polymeric fibers.

### **Response to Argument**

5. Applicant's arguments filed February 12, 2008 have been fully considered but they are not persuasive.

Applicants argue that the claims as amended are now fully commensurate in scope with the showing of unexpected results in the specification, and as such the

showing of unexpected results is sufficient to overcome prima facie obviousness of the claims. However, the examiner disagrees.

Regarding applicants' argument filed March 29, 2006 (pages 4-6) that applicants are intending to maintain, applicants argue that the specification contains "unexpected results" in "loss modulus" properties of the claimed rubber compositions at 50 °C and – 10 °C, which indicate the criticality of the claimed "maleinized polybutadiene" feature. However, applicants fail to recognize that the argued "unexpected results" are based on comparative data that do not commensurate to the scope of the claimed invention and the prior art used for the instant rejection.

Applicants must recognize that the difference between Corvasce et al. and the claimed invention is that Corvasce et al. disclose the use of polybutadiene that has not been maleinized (column 17, line 50-55), while the applicants' invention involves the use of maleinized polybutadiene in the rubber composition formulations. Because applicants' argued "unexpected results" are based on the comparison of rubber compositions comprising "maleinized polybutadiene" with or without silane, or with or without any silane, starch, and maleinized polytadiene, applicants fail to include a comparative sample that represents the teachings of Corvasce et al., which is a rubber composition comprising starch, non-maleinized polybutadiene. To show the criticality of the claimed "maleinized polybutadiene" feature, applicants should include a comparative sample comprising "un-modified polybutadiene", which is clearly taught in Corvasce et al. (column 17, line 50-55). Therefore, in view of the reasons set forth



above, the argued specification fails to show the criticality of the claimed "maleinized polybutadiene" feature as claimed.

Since Huynh-Tran et al. (page 1, [0002]) provides an adhesion promoter comprising maleinized polybutadiene to synergistically improve adhesion of the rubber to polymeric fiber (page 2, [0022 and [0023]), it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the adduct of maleic anhydride and polybutadiene, as taught by Huynh-Tran et al., in Corvasce et als' rubber composition formulation because Huynh-Tran et al. have successfully exemplified incorporating a maleinized polybutadiene in a similar rubber composition with increased adhesion to polymeric fibers.

### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William K. Cheung whose telephone number is (571) 272-1097. The examiner can normally be reached on Monday-Friday 9:00AM to 2:00PM; 4:00PM to 8:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David WU can be reached on (571) 272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/William K Cheung/  
Primary Examiner, Art Unit 1796

William K. Cheung, Ph. D.

Primary Examiner

February 26, 2008